REMARKS

Claims 1-8 and 16-21 are pending in the application. Claims 1-8 and 16-21 have been rejected under 35 U.S.C. §103(a) as being deemed unpatentable over U.S. Patent No. 7,106,833 (Kerpez) in view of U.S. Patent No. 5,511,233 (Otten et al.). Of the Claims, Claims 1 and 16 are independent. The application as argued herein, is believed to overcome the rejections.

Regarding Rejections under 35 U.S.C. § 103(a)

Claims 1-8 and 16-21 have been rejected under 35 U.S.C. §103(a) as being deemed unpatentable over U.S. Patent No. 7,106,833 (Kerpez) in view of U.S. Patent No. 5,511,233 (Otten et al.).

Cited prior art Kerpez discusses optimizing DSL lines transmitting in the same cable on an individual basis in order to maximize the overall throughput in a cable. (*See,* Kerpez, col. 3, lines 30 to col. 4, line 38.)

Cited prior art Otten discusses assignment of a frequency sub-band to a mobile user based on the mobile user's position relative to a fixed microwave service (FMS). The position of the user is determined by a position locating system. If the user is within an interference zone, the user is assigned sub-bands for operation (in a previously allocated frequency band) that are outside the sub-bands of operation of the FMS. (*See,* Otten, Abstract.)

To establish a prima facie case for obviousness under 35 U.S.C. 103(a), (1) there must be some suggestion or motivation to combine reference teachings; (2) there must be a reasonable expectation of success; (3) the references when combined must teach or suggest all the claim limitations. For the reasons discussed below, it is respectfully submitted that the Office has not established a prima facie case under 35 U.S.C. 103(a) for claims 1-8 and 16-21 and that therefore, claims 1-8 and 16-21 are allowable.

The references when combined do not teach or suggest all the claim limitations.

The Office has cited col. 3, lines 30-49 and col. 4, lines 20-65 as teaching:

"if a device emits electromagnetic interference (EMI) in one or more regions of an electromagnetic spectrum occupied by other users"

as claimed by the Applicant in Claim 1.

An embodiment of the Applicant's invention is directed to solving the problem of reducing unacceptable levels of electromagnetic interference (EMI) in areas occupied by other users "without the need to incur shielding costs or additional shielding costs". (*See*, for example, Page 15, paragraph [0040].)

Kerpez does not teach or suggest the Applicant's claimed:

"if a device emits electromagnetic interference (EMI) in one or more regions of an electromagnetic spectrum occupied by other users"

as claimed by the Applicant in Claim1 (emphasis added.).

In contrast, Kerpez merely discusses optimizing reliability and bit rates of individual Digital Subscriber lines (DSL)s in a twisted pair cable by selecting an optimal power spectral density (PSD) for each DSL in the twisted pair cable dependent on the "maximum bit rate that it can reliably transmit". *See,* for example, col. 4, lines 33-55, reproduced below:

"The method of the present invention for joint DSL spectral optimization uses round-robin iterative optimization, where each DSL optimizes its own spectra at each of several iterations in turn. These algorithms jointly optimize all symmetric DSL and asymmetric DSL transmissions to maximize the overall throughput in a cable. The optimal transmit PSDs can be found in an iterative fashion. All DSLs start with some typical starting parameters. Then the transmit PSD of each DSL is optimized in round-robin fashion. The crosstalk into a given DSL is calculated as the power sum of all transmissions passed through their measured crosstalk couplings. An asymmetric DSL has its transmit PSD optimized by using the "waterfilling" technique. A symmetric or single carrier DSL has its transmit PSD optimized simply as being the PSD corresponding to the maximum bit rate that it can reliably transmit. Then, the next DSL is optimized, then the next etc., and back to the first DSL, etc., until each DSL has been so optimized several times. This can be calculated off-line using crosstalk data that was measured or extracted from modems. Alternatively, the calculations can be done autonomously

by the actual modems in service. The joint optimization algorithm converges rapidly to unique values after only a few iterations."

Furthermore, Kerpez merely discusses the reduction or elimination of any detected EMI noise irrespective as to as to whether it is "in one or more regions of an electromagnetic spectrum occupied by others". One of the means for reducing detected EMI noise is through the use of shielding. *See*, for example, Kerpez, col. 9. lines 27-45, reproduced below:

"At step 770 the EMI noise is analyzed and at step 775 a decision is made as to whether EMI is a problem. If the EMI is causing serious degradation in a DMT-type DSL system then electronic remediation consisting eliminating the use of some tones and of windowing the DMT signal could be used. EMI cancellation could also be implemented electronically by subtracting an estimate of the EMI from the received signal and noise. At step 785 the system determines if electronic EMI remediation was successful. If so, the process can end at step 795 with the data rate of the DSL loop optimized. If not, then the system displays a repair notification to the operator that the unshielded drop and/or inside wiring of the subscriber needs to be repaired or replaced by shielded cable. This will be recommended only if the system determines that signals transmitted over the measured loop and received only with background noise can achieve the desired performance. If only poor performance is possible then this can be noted rather than wasting effort trying to fix an unfixable situation."

As recited in independent Claim 1, instead of reducing an unacceptable level of EMI through physical means, for example, by adding shielding, "if the device emits EMI in one or more regions of the electromagnetic spectrum occupied by other users" EMI emitted by a device is altered by "reducing the EMI in the one or more regions: and increasing the EMI in one or more other regions of the electromagnetic spectrum that are unoccupied by the other users".

Cited art Otten does not teach or suggest at least:

"if it is determined that the device emits EMI in one or more regions of the electromagnetic spectrum occupied by other users:

reducing the EMI in the one or more regions; and

increasing the EMI in one or more other regions of the electromagnetic spectrum that are unoccupied by the other users."

as claimed by the Applicant in claim 1 (emphasis added).

In contrast, Otten merely determines the mobile user's position and operation frequency (that is, the frequency at which a device operates). The operation frequency is not the same as whether a device emits EMI in a particular region of a spectrum, where the specification defines EMI as "interference that may potentially disrupt, degrade or otherwise interfere with electromagnetic radiation emitted within one or more regions of an electromagnetic spectrum". (*See*, for example, Page 8, paragraph [0020].)

Furthermore, Otten does not discuss altering (reducing/increasing) the EMI.

Therefore, separately or in combination, Kerpez and Otten do not teach or suggest the Applicant's claimed invention. Even if combined, the present invention as now claimed does not result as argued above.

There is no suggestion or motivation to combine reference teachings of Kerpez and Otten

Kerpez and Otten are non-analogous prior art. Kerpez is directed to optimizing performance of digital subscriber lines (DSL) in a twisted pair cable. Otten is directed to assignment of a frequency sub-band to a mobile user based on the mobile user's position relative to a fixed microwave service (FMS). One skilled in the art of DSL would not look to mobile communication systems for "reducing the EMI in the one or more regions; and increasing the EMI in one or more other regions of the electromagnetic spectrum that are unoccupied by the other users" to optimize performance of DSL lines in a twisted-pair cable."

Claims 2-8 are dependent claims that depend directly or indirectly on claim 1, which has been shown to be non-obvious over the cited references. Independent claim 16 recites a like distinction and is thus non-obvious over the cited references. Claims 17-21 depend directly or indirectly on claim 16 and are thus non-obvious over the cited reference.

Accordingly, the present invention as now claimed is not believed to be made obvious by the cited reference. Removal of the rejections under 35 U.S.C. § 103(a) and acceptance of claims 1-8 and 16-21 is respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that all claims (claims 1-8 and 16-21) are in condition of allowance. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the above-referenced application.

Please charge any shortages and credit any overcharges to Deposit Account Number 50-0221.

Respectfully submitted,

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